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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/646,978	09/25/2000	Qinglong Hao	4296	3989

7590

08/05/2003

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EXAMINER

KOSLOW, CAROL M

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 08/05/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-14

# Office Action Summary

Application No.

09/646,978

Applicant(s)

HAO ET AL.

Examiner

C. Melissa Koslow

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 6/23/03.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 10-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

Art Unit: 1755

A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 23 April 2003 has been entered.

Applicants request to replace pages 1-3 is not a proper method of amending the specification. The corrections to the specification indicated on the marked-up copies of pages 1-3 were made in the specification by Examiner's amendment.

The disclosure is objected to because of the following informalities:

The specification does not teach the compositions of samples 1-5. Page 5, lines 6 and 7 states table 1 shows the disclosed material has an afterglow time of 80 hours or more, but table 1 only measures the afterglow time from 5 second to 480 minutes or 8 hours. Applicants need to amend lines 6 and 7 so they no longer state table 1 shows the disclosed material has an afterglow time of 80 hours or more. The specification does not teach the individual amounts of B, Dy and Eu in the  $(\text{Sr}, \text{Eu}, \text{Dy})_{0.95 \pm x} (\text{Al}, \text{B})_2 \text{O}_{3.95 \pm x}$  phase or the  $(\text{Sr}, \text{Dy}, \text{Eu})_{4-x} (\text{Al}, \text{B})_{14} \text{O}_{25-x}$  phase. Appropriate correction is required.

The amendment, response and declaration do not identify the compositions of samples 1-5 and thus this objection is maintained. The declaration does not overcome the objection to page 5. While the declaration does state the taught composition has an afterglow time of 80 hours or more, table 1 does not show this, as implied by the wording of claims 6 and 7 on page 5. Finally, the declaration shows that the individual amounts of amounts of Eu and Dy determine the

Art Unit: 1755

afterglow properties of the composition and thus are critical to the invention. Therefore the objections are maintained.

Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 10 and 11 do not teach the individual amounts of B, Dy and Eu in the  $(\text{Sr}, \text{Eu}, \text{Dy})_{0.95 \pm x} (\text{Al}, \text{B})_2 \text{O}_{3.95 \pm x}$  phase or the  $(\text{Sr}, \text{Dy}, \text{Eu})_{4-x} (\text{Al}, \text{B})_{14} \text{O}_{25-x}$  phase.

The declaration shows that the individual amounts of amounts of Eu and Dy determine the afterglow properties of the composition and thus should be claimed. The rejection is maintained.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Royce et al.

This reference teaches producing a light-emitting material by pulverizing  $\text{SrCO}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{H}_3\text{BO}_3$ ,  $\text{Eu}_2\text{O}_3$  and  $\text{Dy}_2\text{O}_3$ , heating the mixture at 1200-1500°C for 1-6 hours in a reducing atmosphere to sinter the mixture, cooling the resulting body and pulverizing the cooled material. Column 5, lines 59-66 teach the europium in the material is in the +2 state, thus the trivalent europium in  $\text{Eu}_2\text{O}_3$  must be reduced during the process. While the reference does not explicitly teach the europium source can be  $\text{Eu}_2\text{O}_3$ , it is clear that the europium source can be europium oxide since the dysprosium source can be dysprosium oxide and the fact that it is notoriously well known in the art that europium oxide can be used as the source of europium in the

Art Unit: 1755

production of aluminate phosphors. Accordingly, the reference implicitly teaches europium oxide can be used as the source of europium. The taught temperature range overlaps and encompasses the claimed temperatures and the taught sintering time overlaps the claimed time. Process claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The claimed process is suggested by the taught process.

Applicants are correct the reference does not explicitly teach the claimed raw materials, but it does implicitly teach them for the reasons given above. The rejection is maintained.

Claims 12-15 are rejected under 35 U.S.C. 103(a) as being obvious over Hao et al.

This reference teaches producing a light-emitting material by pulverizing  $\text{SrCO}_3$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{H}_3\text{BO}_3$ ,  $\text{Eu}_2\text{O}_3$  and  $\text{Dy}_2\text{O}_3$ , heating the mixture at 800-1200°C for 2-5 hours in a reducing condition by burying the mixture in carbon powder to sinter the mixture, cooling the resulting body and pulverizing the cooled material. While the reference does not teach the sintering step reduces Eu+3 in  $\text{Eu}_2\text{O}_3$  to Eu+2, one of ordinary skill in the art would know the europium activator in alkaline earth aluminate phosphors, such as that taught, has a +2 state. Thus the taught sintering step must inherently reduce Eu+3 in  $\text{Eu}_2\text{O}_3$  to Eu+2. The taught temperature range overlaps the claimed temperatures and the taught sintering time overlaps the claimed time. Process claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The claimed process is suggested by the taught process.

Art Unit: 1755

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Accordingly, this rejection qualified as prior art under 103/102(a).

Even with the certified translation, this rejection will still be applicable. Paragraph 1 of the declaration states the inventors in U.S. patent 5,885,483 are also the assignees of the patent. Since U.S. Patent 5,885,483 lists two inventors, Jun Li and Baoshan Lu, not listed as inventors for this applicants and U.S. Patent 5,885,483 does not include Atsushi Ogura, the inventors and thus the assignees of the present application are not identical to the assignees of U.S. Patent 5,885,483. The request to add Atsushi Ogura to U.S. Patent 5,885,483 by Certificate of Correction was denied and thus he is not one of the inventors of U.S. Patent 5,885,483. The rejection is maintained.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 1755

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (703) 308-3817. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (703) 308-3823.

The fax number for Amendments filed under 37 CFR 1.116 or After Final communications is (703) 872-9311. The fax number for all other official communications is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661 or (703) 308-0662.

cmk  
August 1, 2003

  
C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700